



Guidelines for Controlling Crusted (Norwegian) Scabies Outbreaks in Long Term Care Facilities or Other Institutional Settings

This document has been adapted from guidance produced by the Centers for Disease Control and Prevention. It can be accessed at the website <http://www.cdc.gov/scabies/hcp/institutions.html>.

Background

Scabies is a parasitic infestation of the skin caused by a mite, *Sarcoptes scabiei*. Scabies infestation is not a reportable disease in Oklahoma; however, long term care facilities and other institutional settings should contact the Acute Disease Service (ADS) of the Oklahoma State Department of Health (OSDH) Epidemiologist-on-Call at (405) 271-4060 (available 24/7/365) if a suspected scabies or other rash illness outbreak is occurring among facility residents and staff. The ADS Epi-on-Call will consult with facility personnel regarding confirmation of the etiologic agent and control measures.

Symptoms

Crusted (Norwegian) scabies is a severe form of scabies that can affect the elderly, persons who are immunocompromised, or persons who have conditions that prevent them from itching and/or scratching (spinal cord injury, paralysis, loss of sensation, mental debility). Crusted scabies is characterized by vesicles and thick crusts over the skin that can contain many mites. Itching (pruritus) may be absent in crusted scabies because of a patient's altered immune status or neurological condition. Because they are infested with large numbers of mites (up to 2 million), persons with crusted scabies are very contagious. Persons with crusted scabies may not show the usual signs and symptoms of scabies such as the characteristic rash or itching (pruritis).

The most common symptoms of scabies, itching and a skin rash, are caused by sensitization (a type of "allergic" reaction) to the proteins and feces of the parasite. A pimple-like (papular) itchy (pruritic) "scabies rash" is also common. Itching and rash may affect much of the body or be limited to common sites such as: Between the fingers, wrist, elbow, armpit, penis, nipple, waist, buttocks, or shoulder blades.

Incubation Period

When a person is infested with scabies mites for the first time, symptoms usually do not appear for up to two months after initial infestation. If a person has had scabies before, symptoms appear much sooner (1-4 days) after exposure. Individuals experiencing a scabies infestation can transmit scabies, even if they do not have symptoms, until they are successfully treated and the mites and eggs are destroyed.

Diagnosis

Diagnosis of a scabies infestation is usually made based upon the customary appearance and distribution of the rash and the presence of burrows. Whenever possible, the diagnosis of scabies should be confirmed by identifying the mite or mite eggs of fecal matter (scybala). This can be done by carefully removing the mite from the end of its burrow using the tip of a needle or by obtaining a skin scraping to examine under a microscope for mites, eggs, or scybala.

A person with crusted (Norwegian) scabies will be infested with thousands of mites.

Transmission

The scabies mite is almost always passed by direct, prolonged, skin-to-skin contact with a person who is already infested. An infested person can spread scabies even if he or she has no symptoms. Humans are the only source of infestation; animals do not spread human scabies.

Scabies can be passed by an infested person to his or her household members and sexual partners. Scabies can spread easily under crowded conditions where close body and skin contact is common. Institutions such as nursing homes, extended-care facilities, and prisons are often sites of scabies outbreaks.

In addition to spreading scabies through brief direct skin-to-skin contact, persons with crusted (Norwegian) scabies can transmit scabies indirectly by shedding mites that contaminate items such as their clothing, bedding, and furniture. Persons with crusted scabies should receive quick and aggressive medical treatment for their infestation to prevent outbreaks of scabies.

Crusted (Norwegian) Scabies Outbreak Recommendations:

Control measures for an outbreak involving **one or more cases of crusted (Norwegian) scabies** should involve rapid and aggressive detection, diagnosis, infection control, and treatment measures because this form of scabies is so highly transmissible. Unrecognized crusted scabies is often the source of institutional outbreaks of scabies. Infection control personnel and dermatologists should be involved as soon as scabies is suspected in an institution. An institution-wide information program should be implemented to instruct all management, medical, nursing, and support staff about scabies, the scabies mite, and how scabies is and is not spread.

Surveillance

- Have an active program for early detection of infested patients and staff; unrecognized crusted scabies is frequently the source of institutional scabies outbreaks.
- Maintain a high index of suspicion that scabies may be the cause of undiagnosed skin rash; suspected cases should be evaluated and confirmed by obtaining skin scrapings; persons with crusted scabies may not show the characteristic symptoms of scabies such as rash and itching (pruritis). Consult a healthcare provider or dermatologist to help confirm scabies.
- Screen all new patients and staff for scabies.
- Notify the ADS Epi-on-Call at (405) 271-4060 to discuss control measures; notify other institutions to or from which infested or exposed patients may have transferred.
- Maintain ongoing surveillance for scabies among all patients and staff to identify new or unsuccessfully treated cases of scabies.

Diagnostic Services

- Consult with an experienced dermatologist for assistance in differentiating skin rashes and confirming the diagnosis of scabies.
- Ensure someone on-staff is trained and experienced in obtaining and examining a skin scraping to identify scabies mites.

Control Recommendations

Persons with crusted (Norwegian) scabies are infested with very large numbers of mites; this increases the risk of transmission both from brief skin-to-skin contact and from contact with items such as bedding, clothing, furniture, rugs, carpeting, floors, and other fomites that can become contaminated with skin scales and crusts shed by a person with crusted scabies.

- Clean all rooms of individuals with scabies: laundering bedding and clothes, vacuuming carpets/rugs/furniture, cleaning floors, and cleaning other fomites.
 - Bedding and clothing should be machine-laundered using hot water and hot dryer cycles.
 - Advise housekeeping to maintain contact precautions when cleaning and handling contaminated items.
- Maintain records with patient name, age, sex, room number, roommate(s) name(s), skin scraping status and result(s), and name(s) of all staff who provided hands-on care to the patient before implementation of infection control measures: symptoms can take up to 2 months to appear in exposed persons and staff.
- Use epidemiologic data about distribution of confirmed cases by building, room, floor, wing, occupation (for staff), dates of admission, and onset of scabies-like condition to determine: 1) levels of risk for patients, staff, and visitors; 2) extent of the outbreak (e.g. confined or widespread in the facility); and 3) temporal relationship among cases.
- Use contact precautions (all staff and visitors) with protective garments (e.g. gowns, disposable gloves, shoe covers, etc.) when providing care to any patient with crusted scabies until successfully treated; wash hands thoroughly after providing care to any patient.

- Isolate patients with crusted scabies from other patients who do not have crusted scabies; consider assigning a cohort of caretakers to care only for patients with crusted scabies.
- Maintain contact precautions until skin scrapings from a patient with crusted scabies are negative; persons with crusted scabies generally must be treated at least twice, a week apart; oral ivermectin may be necessary for successful treatment.
- Limit visitors for patients with crusted scabies; visitors should use the same contact precautions and protective clothing as staff.

Treatment Recommendations

- Individuals with crusted scabies generally require treatment at least twice, a week apart.
- Identify and treat all patients, staff, and visitors who may have been exposed to a patient with crusted scabies or to clothing, bedding, furniture or other items (fomites) used by such a patient; strongly consider treatment even in equivocal circumstances because controlling an outbreak involving crusted scabies can be very difficult and risk associated with treatment is very low.
- Offer treatment to household members (e.g. spouses, children, etc.) of staff who are undergoing scabies treatment.
- Treat patients, staff, and household members at the same time to prevent reinfestation and continued transmission.
- Staff generally can return to work the day after receiving a dose of treatment with permethrin or ivermectin.
- Use procedures that minimize risk of secondary bacterial infections that may develop with scabies (i.e., proper wound care to prevent bacterial skin infections).

Environmental Disinfection

- Ensure bedding and clothing used by a person with crusted scabies is collected and transported in a plastic bag and emptied directly into a washer to avoid contaminating other surfaces and items; machine wash and dry all items using the hot water and high heat cycles (temperatures in excess of 122° F or 50° C for 10 minutes will kill mites and eggs); ensure laundry personnel use protective garments and gloves when handling contaminated items.
- Attempt to ensure that all persons who receive treatment have the clothing and bedding they used anytime during the 3 days before treatment machine-washed and dried using the hot water and high heat cycles.
- Clean the room of patients with crusted scabies regularly to remove contaminated skin crusts and scales that contain mites.
- Thoroughly clean and vacuum the room when a patient with crusted scabies leaves the facility or moves to a new room.

Communication

- Establish procedures for identifying and notifying at-risk patients and staff who are no longer at the institution.
- Consider implementing a proactive employee health service approach to scabies including providing information about scabies to all staff and providing dermatologic consultation for employees and, where appropriate, their household members.
- Maintain an open and cooperative attitude between management and staff.

Scabicides

The following medications for the treatment of crusted scabies are available only by prescription.

1. Permethrin cream 5% (per-meth-rin)
 - Brand name product: Elimite*
 - Permethrin is approved by the US Food and Drug Administration (FDA) for the treatment of scabies in persons who are at least 2 months of age.
 - Permethrin is the drug of choice for the treatment of scabies. Two (or more) applications, each about a week apart, may be necessary to eliminate all mites, particularly when treating crusted (Norwegian) scabies.

2. Benzyl benzoate 25% with or without tea tree oil)
 - Benzyl benzoate may be used as an alternative topical agent to permethrin. However, this agent may cause immediate skin irritation. Lower concentrations may be used in children (10% or 12.5%).
3. Keratolytic cream (topical)
 - A topical keratolytic cream may also be used to help reduce the crusting of the skin and aid in the absorption of the topical permethrin or benzyl benzoate.
4. Ivermectin
 - Brand name product: Stromectol*
 - Ivermectin is an oral antiparasitic agent approved for the treatment of worm infestations. Evidence suggests that oral ivermectin may be a safe and effective treatment for scabies; however, ivermectin is not FDA-approved for this use.
 - Oral ivermectin has been reported effective in the treatment of crusted (Norwegian) scabies; its use should be considered for patients who have failed treatment with or who cannot tolerate FDA-approved topical medications for the treatment of scabies. A total of two or more doses of ivermectin may be necessary to eliminate a scabies infection.

Recommendations for application of scabicides

- It is best to apply scabicide at bedtime.
- Personnel applying scabicides need to wear gowns and gloves.
- Itching will continue for at least two weeks after appropriate treatment. Improvement should be seen; however, no new vesicles or burrow should emerge.
- Contact the medical director in two weeks if any new cases of scabies occur or if evidence of reinfestation of a previously treated patient is seen.
- Consider treatment with Benadryl or other medications to decrease inflammation and secondary infection.
- Infested employees should remain at home until treatment is completed.